


Animal Models Appropriate To Assess Human ART Outcomes

Evidence for Evidence-Based ART



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Procreation 2002: ART & Beyond...

- **Assisted Reproductive Technologies (ART)**
 - IVF; ICSI; ELSI; PDG/AS; Egg Banking.
- **Embryonic Stem Cells:** Totipotent, Immortalized
- **Cloning:** Genetically Identical Offspring; ESCs
 - ICNI (Nuclear) & Nuclear Transfer.
 - Embryo Splitting (Artificial Twinning).
- **Transgenesis:** Genetically Modified Offspring
 - Germline Gene Transfer; Genetic Enhancement
- **Non-Invasive Fetal Imaging *In Utero***
 - MRI, Magnetic Resonance Microscopy → Structure
 - microPET → Function
 - Transgenic MRI/ PET Reporters
- **Ethical, Legal and Social Implications (ELSI)**

Problems of Garnering Relevant Evidence for Evidence-Based ART

- Prospective studies
- Variations in data collection and reporting
- Varying instrumentation
- Environmental variations
- ART techniques evolving rapidly

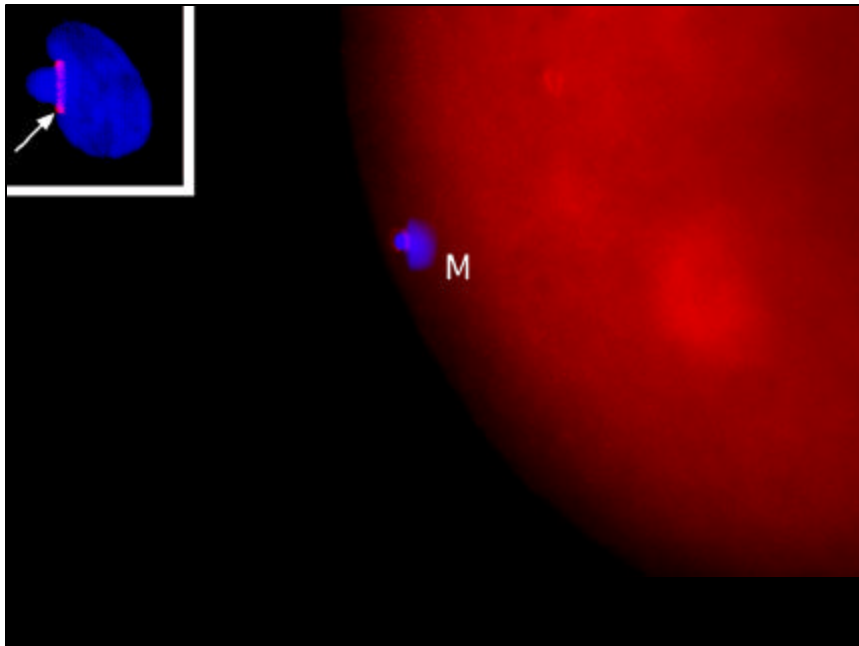
Evidence From Animal Research for Evidence- Based ART:

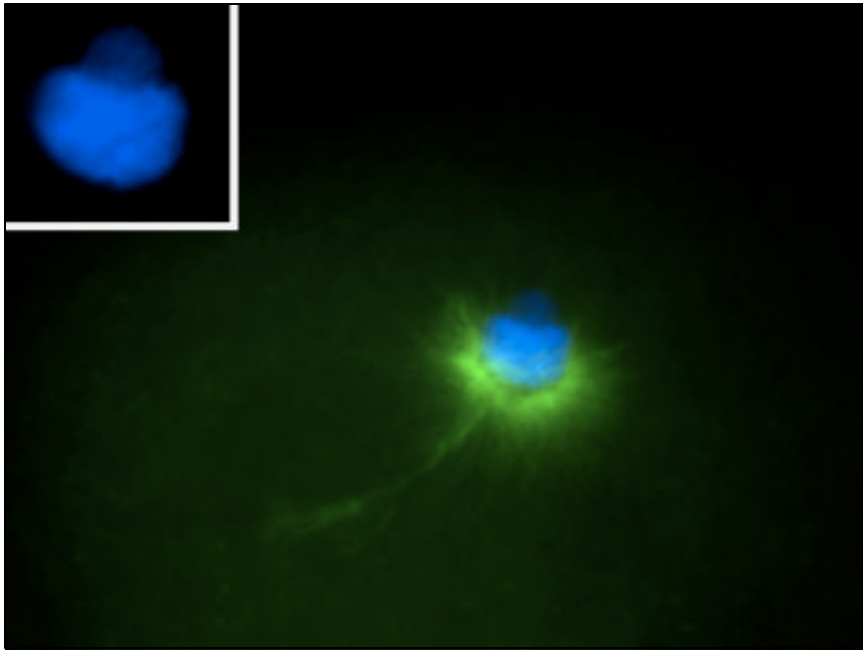
ART before Science?
Lessons from Mice, Monkeys and
Clinical Experience

Evidence From Animal Research for Evidence-Based ART:

ART before Science?

- **Intracytoplasmic Sperm Injection (ICSI):**
 - Infertility mutation transmission (Y-microdeletions, CF);
 - Exogenous RNA, DNA.
- **Mitochondrial DNA and Cytoplasmic Transfer: Germline Transfer in Children**
- **Embryo Culture: The First Environment**
 - Genomic Imprinting Errors, Prions
 - Cryopreservation:
 - Sperm, Embryo, Egg Banking.





Cytoplasmic Transfer

